SEQUENCE LISTING

<110> Elan Pharmaceuticals, Inc.
Regents of the University of California
Schenk, Dale B.
Masliah, Eliezer

<120> PREVENTION AND TREATMENT OF SYNUCLEINOPATHIC DISEASE

<130> 015270-008930US

<140> US 10/___,___
<141> 2003-10-31

<150> US 60/423,012
<151> 2002-11-01

<150> US 60/137,010
<151> 1999-06-01

<150> US 09/580,015
<151> 2000-05-26

<150> US 09/585,817
<151> 2000-06-01

<160> 57

<170> PatentIn version 3.1

<210> 1
<211> 140
<212> PRT
<213> Homo sapiens

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Met Asp Val Phe Met Lys Gly Leu Ser Lys Ala Lys Glu Gly Val Val
1 5 10 15

Ala Ala Ala Glu Lys Thr Lys Gln Gly Val Ala Glu Ala Ala Gly Lys
20 25 30

Thr Lys Glu Gly Val Leu Tyr Val Gly Ser Lys Thr Lys Glu Gly Val
35 40 45

Val His Gly Val Ala Thr Val Ala Glu Lys Thr Lys Glu Gln Val Thr
50 55 60

Asn Val Gly Gly Ala Val Val Thr Gly Val Thr Ala Val Ala Gln Lys
65 70 75 80

Thr Val Glu Gly Ala Gly Ser Ile Ala Ala Ala Thr Gly Phe Val Lys
85 90 95

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Lys Asp Gln Leu Gly Lys Asn Glu Glu Gly Ala Pro Gln Glu Gly Ile
            100                 105                 110

Leu Glu Asp Met Pro Val Asp Pro Asp Asn Glu Ala Tyr Glu Met Pro
        115                 120                 125

Ser Glu Glu Gly Tyr Gln Asp Tyr Glu Pro Glu Ala
    130                 135                 140
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<210> 2
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Glu Gln Val Thr Asn Val Gly Gly Ala Val Val Thr Gly Val Thr Ala
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Val Ala Gln Lys Thr Val Glu Gly Ala Gly Ser Ile Ala Ala Ala Thr
            20                  25                  30

Gly Phe Val
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<210> 3
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<400> 3

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Ala Val Ala Gln Lys Thr Val Glu Gly Ala Gly Ser
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<210> 4
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<213> Influenza virus

<400> 4

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Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr
1               5                   10
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<210> 5
<211> 16
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<213> Plasmodium sp.

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Glu Lys Lys Ile Ala Lys Met Glu Lys Ala Ser Ser Val Phe Asn Val
1 5 10 15

<210> 6
<211> 10
<212> PRT
<213> Hepatitis B virus

<400> 6

Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile
1 5 10

<210> 7
<211> 19
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<213> Homo sapiens

<400> 7

Asp Gln Ser Ile Gly Asp Leu Ile Ala Glu Ala Met Asp Lys Val Gly
1 5 10 15

Asn Glu Gly

<210> 8
<211> 14
<212> PRT
<213> Mycobacterium bovis

<400> 8

Gln Val His Phe Gln Pro Leu Pro Pro Ala Val Val Lys Leu
1 5 10

<210> 9
<211> 15
<212> PRT
<213> Clostridium tetani

<400> 9

Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Leu
1 5 10 15

<210> 10
<211> 21
<212> PRT
<213> Clostridium tetani

<400> 10

Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
1 5 10 15

Ala Ser His Leu Glu
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<210> 11
<211> 16
<212> PRT
<213> Human immunodeficiency virus

<400> 11

Lys Gln Ile Ile Asn Met Trp Gln Glu Val Gly Lys Ala Met Tyr Ala
1 5 10 15

<210> 12
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<223> X is preferably cyclohexylalanine, tyrosine or phenylalanine

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Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala
1 5 10

<210> 13
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<400> 13

Lys Glu Gln Val Thr Asn Val Cys Gly Gly Ala Val Val Thr
1 5 10

<210> 14
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<400> 14

Gly Val Thr Ala Val Ala Gln Lys Thr Val Glu Cys Gly
1 5 10

<210> 15
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<210> 16
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<210> 17
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<400> 17

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1 5 10 15

Ser Ala Ser His Leu Glu
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<210> 18
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<400> 18

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1 5 10 15

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<223> X= NAC peptide

<400> 19

Xaa Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Leu
1 5 10 15

Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
20 25 30

Ala Ser His Leu Glu
35

<210> 20
<211> 14

<212> PRT
<213> Artificial Sequence

<220>
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<223> X = cyclohexylalanine, tyrosine or phenylalanine

<220>
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<223> X= NAC peptide

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1 5 10

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<223> X= cycloheylalanine, tyrosine, or phenylalanine

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Xaa Xaa Xaa Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala
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<210> 22
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<223> X= cycloheylalanine, tyrosine, or phenylalanine

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<223> X=NAC peptide

<400> 22

Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala Xaa Xaa Xaa
1 5 10 15

Xaa

<210> 23
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<212> PRT
<213> Artificial Sequence

<220>
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<220>
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<222> (4)..(4)
<223> X= cycloheylalanine, tyrosine, or phenylalanine

<400> 23

Xaa Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala
1 5 10

<210> 24
<211> 18
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<223> X=NAC

<400> 24

Xaa Ile Ser Gln Ala Val His Ala Ala His Ala Glu Ile Asn Glu Ala
1 5 10 15

Gly Arg

<210> 25
<211> 16
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<400> 25

Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr Xaa Xaa Xaa
1 5 10 15

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<400> 26

Xaa Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr Xaa
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<400> 27

Xaa Xaa Xaa Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr
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<210> 28
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<400> 28

Xaa Xaa Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr
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<210> 29
<211> 106
<212> PRT
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<400> 29

Xaa Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr Glu Lys
1 5 10 15

Lys Ile Ala Lys Met Glu Lys Ala Ser Ser Val Phe Asn Val Gln Tyr
20 25 30

Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Leu Phe Asn Asn
35 40 45

Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser Ala Ser His
50 55 60

Leu Glu Xaa Xaa Xaa Xaa Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile
65 70 75 80

Gly Ile Thr Glu Leu Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg
85 90 95

Val Pro Lys Val Ser Ala Ser His Leu Glu
100 105

<210> 30
<211> 77
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<400> 30

Xaa Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Leu
1 5 10 15

Cys Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val
20 25 30

Ser Ala Ser His Leu Glu Xaa Gln Tyr Ile Lys Ala Asn Ser Lys Phe
35 40 45

Ile Gly Ile Thr Glu Leu Cys Phe Asn Asn Phe Thr Val Ser Phe Trp
50 55 60

Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu Xaa
65 70 75

<210> 31
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<400> 31

Xaa Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Leu
1 5 10 15

<210> 32
<211> 26
<212> PRT
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<220>
<223> Fusion protein

<400> 32

Glu Gln Val Thr Asn Val Gly Gly Ala Ile Ser Gln Ala Val His Ala
1 5 10 15

Ala His Ala Glu Ile Asn Glu Ala Gly Arg
20 25

<210> 33
<211> 43
<212> PRT
<213> Homo sapiens

<400> 33

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala Thr
35 40

<210> 34
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Conjugate

<400> 34

Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe
1 5 10 15

Ile Gly Ile Thr Glu Leu
20

<210> 35
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Conjugate

<400> 35

Asp Ala Glu Phe Arg His Asp Phe Asn Asn Phe Thr Val Ser Phe Trp
1 5 10 15

Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu
20 25

<210> 36
<211> 43
<212> PRT
<213> Artificial Sequence

<220>
<223> Conjugate

<400> 36

Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe
1 5 10 15

Ile Gly Ile Thr Glu Leu Phe Asn Asn Phe Thr Val Ser Phe Trp Leu
20 25 30

Arg Val Pro Lys Val Ser Ala Ser His Leu Glu
35 40

<210> 37
<211> 22
<212> PRT
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<220>
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<400> 37

Glu Phe Arg His Asp Ser Gly Gln Tyr Ile Lys Ala Asn Ser Lys Phe
1 5 10 15

Ile Gly Ile Thr Glu Leu
20

<210> 38
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<223> X= cycloheylalanine, tyrosine, or phenylalanine

<400> 38

Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala Asp Ala Glu
1 5 10 15

Phe Arg His Asp
20

<210> 39
<211> 34
<212> PRT
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<223> X= cycloheylalanine, tyrosine, or phenylalanine

<400> 39

Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala
1 5 10 15

Glu Phe Arg His Asp Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala
20 25 30

Ala Ala

<210> 40
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<220>
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<220>
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<223> X= cycloheylalanine, tyrosine, or phenylalanine

<400> 40

Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala Asp Ala Glu
1 5 10 15

Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg
20 25 30

His Asp

<210> 41
<211> 20
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<220>
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<220>
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<222> (10)..(10)
<223> X= cycloheylalanine, tyrosine, or phenylalanine

<400> 41

Asp Ala Glu Phe Arg His Asp Ala Lys Xaa Val Ala Ala Trp Thr Leu
1 5 10 15

Lys Ala Ala Ala
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<212> PRT
<213> Artificial Sequence

<220>
<223> Fusion protein

<400> 42

Asp Ala Glu Phe Arg His Asp Ile Ser Gln Ala Val His Ala Ala His
1 5 10 15

Ala Glu Ile Asn Glu Ala Gly Arg
20

<210> 43
<211> 24
<212> PRT
<213> Artificial Sequence

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<400> 43

Phe Arg His Asp Ser Gly Tyr Ile Ser Gln Ala Val His Ala Ala His
1 5 10 15

Ala Glu Ile Asn Glu Ala Gly Arg
20

<210> 44
<211> 24
<212> PRT
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<220>
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<400> 44

Glu Phe Arg His Asp Ser Gly Ile Ser Gln Ala Val His Ala Ala His
1 5 10 15

Ala Glu Ile Asn Glu Ala Gly Arg
20

<210> 45
<211> 34
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<400> 45

Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr Asp Ala Glu
1 5 10 15

Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg
20 25 30

His Asp

<210> 46

<211> 27
<212> PRT
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<220>
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<400> 46

Asp Ala Glu Phe Arg His Asp Pro Lys Tyr Val Lys Gln Asn Thr Leu
1 5 10 15

Lys Leu Ala Thr Asp Ala Glu Phe Arg His Asp
20 25

<210> 47
<211> 34
<212> PRT
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<220>
<223> Fusion protein

<400> 47

Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala
1 5 10 15

Glu Phe Arg His Asp Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu
20 25 30

Ala Thr

<210> 48
<211> 27
<212> PRT
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<220>
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<400> 48

Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Pro Lys
1 5 10 15

Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr
20 25

<210> 49
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<212> PRT
<213> Artificial Sequence

<220>
<223> Fusion protein

<400> 49

Asp Ala Glu Phe Arg His Asp Pro Lys Tyr Val Lys Gln Asn Thr Leu
1 5 10 15

Lys Leu Ala Thr Glu Lys Lys Ile Ala Lys Met Glu Lys Ala Ser Ser
20 25 30

Val Phe Asn Val Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile
35 40 45

Thr Glu Leu Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro
50 55 60

Lys Val Ser Ala Ser His Leu Glu Asp Ala Glu Phe Arg His Asp
65 70 75

<210> 50
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<212> PRT
<213> Artificial Sequence

<220>
<223> Fusion protein

<400> 50

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1 5 10 15

Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly
20 25 30

Ile Thr Glu Leu Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro
35 40 45

Lys Val Ser Ala Ser His Leu Glu
50 55

<210> 51
<211> 44
<212> PRT
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<220>
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<400> 51

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Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe
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Ile Gly Ile Thr Glu Leu Cys Phe Asn Asn Phe Thr Val Ser Phe Trp
            20                  25                  30

Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu
        35                  40
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<220>
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<400> 52

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Ile Gly Ile Thr Glu Leu Cys Phe Asn Asn Phe Thr Val Ser Phe Trp
            20                  25                  30

Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu Asp Ala Glu Phe
        35                  40                  45

Arg His Asp
    50
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<210> 53
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<220>
<223> Fusion protein

<400> 53

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1               5                   10                  15

Ile Gly Ile Thr Glu Leu
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<210> 54
<211> 14
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<213> Homo sapiens

<400> 54

Lys Glu Gln Val Thr Asn Val Cys Gly Gly Ala Val Val Thr
1 5 10

<210> 55
<211> 13
<212> PRT
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<400> 55

Gly Val Thr Ala Val Ala Gln Lys Thr Val Glu Cys Gly
1 5 10

<210> 56
<211> 12
<212> PRT
<213> Homo sapiens

<220>
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<223> X = amino-heptanoic acid

<400> 56

Xaa Lys Asn Glu Glu Gly Ala Pro Cys Gln Glu Gly
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<210> 57
<211> 14
<212> PRT
<213> Homo sapiens

<220>
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<223> ACETYLATION
X= Aecylated proline

<220>
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<223> X = Aecylated proline

<400> 57

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1 5 10